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ABSTRACT

The author presents a proposal for extracting a component of palatalization in sets of Russian phonemes and argues that it is co-occurrent, as a minimum segment, with one consonant phoneme. Morphophonemic implications concerning the entire phonemic system and variations of analysis due to this approach are specified. A rejoinder and an editorial, both critical of attempts at phonemic reduction in the Russian system, are included. (RL)

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An Alternate Phonemic Analysis of Russian

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It is common knowledge that Russian consonants occur for the most part in pairs, the members of which are distinguished from each other by the presence or absence of the feature of palatalization, and that vowels following a palatalized consonant are higher, fronter, and tenser, while between two palatalized consonants the incidence of highness, frontness, and tenseness in the vowel is still stronger.[1] Thus:

[bɨt] 'way of life' [bit] 'beaten' [bʲiʈ] 'to beat'

[pat] 'stalemate' [pat] 'of heels' [pæʈ] 'five'

Phonemicists have usually posited parallel sets of palatal and non-palatal consonants and set up the higher, fronter, tenser vowel variants occurring after and between palatalized consonants as positionally determined allophones of the lower, backer, laxer vowels occurring elsewhere.[2] In the case of the vowel /i/ the high, front, tense allophone also occurs word initially except when following, without intervening major juncture, a word ending in a non-palatalized consonant.

There is however one contrast of which such an analysis does not take account. It is between [i] (name of the letter *i*) and [ɨ] (name of the letter *y*).[3] These two phonetic segments are distinguished by native speakers, enter into utterances with distinctive meaning (e.g., *Pišite "i", a ne "y", posle "š."* 'Write *i*, not *y*, after *š*.') and presumably are realizations of separate morphemes. This distinction ought not to be tacitly ignored (as apparently by all phonemic analyses of Russian heretofore) nor swept under the rug as 'marginal' or part of a separate co-existent subsystem. I propose the following solution:

A component of palatalization is extracted from the consonants of the palatalized set, which is co-occurrent with, as a minimum segment, one consonant phoneme.[4] It will also co-occur with any vowel which may follow this consonant, being actualized in the vowel as the features of raising, tensing, and fronting, and its domain of co-occurrence will extend forward, subject to certain rules, over any consonants which may precede it until the next preceding vowel or juncture is reached.[5] If the next preceding vowel (without intervening juncture) is not already in the

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co-occurrence domain of the palatal component from a preceding consonant, it will have a slight high-front off-glide, e.g. [ko^{i}ɲ] 'horse.' If it is in the co-occurrence domain of a palatal component from a preceding consonant, then the effect is to intensify the raising, fronting, and tensing manifestations of that component. For the sake of convenience, we will symbolize the palatal component as /ˌ/ written after a consonant symbol and define its domain as extending over the vowel following, if any, and over the consonant or consonants preceding (according to the restrictions mentioned in note 5) until and including the next vowel preceding or until a juncture is reached. Phonemically we then have: *byt* /bit/ *bit* /bʲt/ *bit'* /bʲtˌ/ ; *pat* /pat/ *pjat* /pʲat/ *pjat'* /pʲatˌ/ ; *snjat'* 'to take off' /snʲatˌ/ . In the case of word-initial /i/, we must state that there is a co-occurrent /ˌ/ (without any preceding consonant) when that phoneme occurs after pause, juncture, or vowel, with but one exception, namely the name of the letter *y* /i/ which never has co-occurrent /ˌ/. Now. [i] 'name of *i*' is /ˌi/ and [ɨ] 'name of *y*' is /i/.

Positing a palatalizing component has the further important advantage of decreasing the stock of phonemes. We now have:

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consonants:

	palatalizable (occur with or without ˌ)	always palatalized (occur only with ˌ)	non-palatalizable (never occur with ˌ)
voiced:	p t k f s x	č	š c
voiceless:	b d g v z		ž
neutral:	m n r l		j

palatalizing component: ˌ

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stresses: ` ´

junctures: (at least one, possibly two, minor junctures; one major juncture:

terminal contours: (rising and falling; occur in conjunction with major juncture)

pitch levels: 1 2 3 4

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vowels:

i e a o u

The otherwise non-palatalizable /š/ and /ž/ occur geminately (long) with /ˌ/ (i.e. /ššˌ/ and /žžˌ/ in some idiolects (and in the prescribed literary standard); in other idiolects these sequences are replaced by /ščˌ/ and /žž/).

The phonemes /k, g, x/ never occur before /i, e/ without co-occurrent /ˌ/, while /x/ never occurs before /a, o, u/ with /ˌ/.

From the pedagogical point of view there is an interesting and unexpected dividend from this analysis. Russian morphological description is usually expounded in a morphophonemic, rather than a purely phonemic, transcription, because of the neutralization of the voice feature in word-final position and of the contrasts /a/ vs. /o/ and /e/ vs. /i/ in unstressed position.[6] Thus, one would write morphophonemically 〈górod〉, which is phonemically /górat/ and phonetically [górət]. In setting up our morphophonemic notation, we must establish the convention that when we write a suffix or an ending beginning with 〈ˌ〉, the final consonant or consonant cluster plus preceding vowel of any stem to which such suffix or ending be attached comes under the co-occurrence domain of /ˌ/, unless the final consonant is either non-palatalizable or already palatalized. Note the effect of adding the nominative ending 〈a〉 or the dative ending 〈ˌe〉 to the following stems:

stem ends in palatalizable consonant, not yet palatalized
〈žon-〉 'wife' /žiná/ /žiné/

stem ends in paltalizable consonant, already palatalized
〈dad-〉 'uncle' /dáda/ /dádi/

stem ends in non-palatalizable consonant
〈duš-〉 'soul' /dušá/ /dušé/

The unexpected pedagogical dividend accrues when we find that, with very few restrictions, we can use the regular Russian Cyrillic letters for our morphophonemic notation, if we equate the soft sign with our 〈ˌ〉, *a e y o u* with our 〈a e i o u〉, *ja e ë ju* with our 〈ˌa ˌe ˌo ˌu〉 after consonant and with 〈ja je jo ju〉 word initially or after vowel, and i with 〈ˌi〉 after consonant or word initially and with 〈ji〉 after vowel. In writing stems we represent /jˌ/ by writing *'j* after consonants and *j* after vowels. Thus, we write *synov'j-* (plural stem of *syn* 'son'), *per'j-* (plural stem of *pero* 'feather'), *zoj-* (stem of the name *Zoja* 'Zoe'). At the expense of a slight increase in the complexity of our morphophonemic notation (a complexity, be it noted, that parallels that of the Russian spelling system) we are enabled to use a morphophonemic notation in expounding Russian structure without requiring our students to learn a special set of symbols and writing conventions different from the regular Russian spelling. Writing stems and endings in this morphophonemic notation which utilizes the regular Cyrillic letters, we can represent grammatical information in concise and economical form. For example, we may give the endings of the adjective as follows:

	masc.		neuter	fem.	plural
Nom	stressed -ój unstressed -yj		-oe	-aja	-ye
Acc.	(like Nom. or Gen.)			-uju	(like Nom. or Gen.)
Gen.	-ovo (written -ogo)			-oj	-yx
Prep.	-om				
Dat.	-omu				-ym
Inst.	-ym			(-oju)	-ymi

There is no need to display on such a table of endings the variants resulting from change of accent (except for the masc. sg. Nom.) and changes of stem type, since these are all covered either by the morphophonemic rules of the language or by the conventions of this notation.[7] We thus avoid such anomalies as the traditional "hard," "soft," and "mixed" adjective declensions.

Notes

1. See any treatise on Russian phonetics, e.g., S.C. Boyanus, *Russian Pronunciation* (Cambridge, 1955), or R. I. Avanesov, *Fonetika sovremennogo russkogo literaturnogo jazyka* (M., 1956).

2. Thus the phonemicization of Russian vowels given by Avanesov, p. 98.

3. See any Soviet textbook of Russian, e.g., N. F. Potapova, *Russian, a Elementary Course*, Book I (M., 1954), 5. The older name for the letter *y*, *ery* is now obsolete (thus, the Academy's *Slovar' russkogo jazyka* (M., 1957], defines *ery* as "ustareloe nazvanie bukvy *y*."

4. Compare Zellig S. Harris's extraction of an emphatic component in Moroccan Arabic. (See Z. S. Harris, "Simultaneous Components in Phonology," *Language* XX [1944], 185 or "The Phonemes of Moroccan Arabic," *JAOS* LXII [1942], 309-319; see also Chapter 10, "Phonemic Long Components" in Harris's *Methods in Structural Linguistics* [Chicago, 1951]).

5. The exact extent to which the domain of this component is carried forward over consonant clusters is subject to a number of complicated factors and varies between idiolects. A discussion of these conditions and variations may be found in R. I. Avanesov, *Russkoe literaturnoe proiznošenie* (M., 1954), pp. 79-96.

6. /ˌó/ (stressed /o/ in the domain of palatalization which extends to preceding phonemes) is replaced by /ˌi/ (except in inflectional endings, where some speakers have /ˌa/) in unstressed position, /ˌá/ is replaced by /ˌi/, except in endings, where it is replaced by /ˌa/, /ˌé/ is replaced by /ˌi/, /e/ by /i/, and /o/ by /a/, except after /š, ž, c/, where it is replaced by /i/. Thus, /čás/ 'hour' /čjsí/ 'hours,' /lés/ 'forest' /ljsá/ 'forests,' /dóm/ 'house' /damá/ 'houses;' /žóni/ 'wives' /žiná/ 'wife.' Such an extraction of a palatalizing component is perhaps implicit, without being formalized, in the transcriptions used by George L. Trager, William Cornyn, and Sergej Karcevskij in various publications, e.g. Trager's *Introduction to Russian* (New Haven, 1942), Cornyn's "On the Classification of Russian Verbs" *Language* XXIV (1948), 64 ff. and *Beginning Russian* (New Haven, 1950), and Karcevskij's *Manuel pratique et théorique du russe* (Genève, Paris, 1956). Trager, in "Russian Declensional Morphemes," *Language* XXIX (1953), 326-338, uses in his transcription /j/ as a

symbol of palatalization without arguing as to its status.

7. Note specifically that in this connection we need only mention that the palatalizing component is added when an ending beginning with /i/ is added to a stem ending in /k, g, x/, since this is a morphophonemic corollary to the distributional statement that the sequence velar plus /i/ never occurs except under the domain of /ˌ/. Purely orthographic rules, such as statements to the effect that *a* and *u*, rather than *ja* and *ju*, are written after *č* or *šč*, or that *i* and *e*, rather than *y* and *è* are written after *š* and *ž*, would not be allowed to obscure the morphological presentation, but would be presented as an elucidation of the spelling system.

A REJOINDER

Charles Bidwell's article contains a few interesting points as far as the Russian morphophonemics is concerned, but in its main assumptions and in methodology it calls for scrutiny and some corrections.

Let us begin with methodology. The author presents a proposal for extracting the component of palatalization as a convenient and presumably new solution. In the footnotes we read on the other hand, "Such an extraction of a palatalizing component is perhaps implicit, without being formalized, in the transcriptions used by George L. Trager, William Cornyn and Sergei Karcevskij in various publications..."

All this is not quite correct. The reader should be informed that Trager's transcription has been explicitly presented by him (in his article "The Phonemes of Russian," *Language* X [1934], 336-344) as simply representing palatalized consonants. The function, then, was here limited to the traditionally recognized one. In this respect, the "implication" of the symbols for palatalization *(j, i, y, ь)* has not really changed, not only since the introduction, by the Prague School, of the notion of distinctive features, but virtually ever since the time of Cyril and Methodius. Incidentally, Trager's procedure as a way of *phonemic* transcription has been sharply criticized by Roman Jakobson, in his review of Trager's *Introduction to Russian* (*Slavonic and East European Review*, No. 60, 1944). Though Jakobson is ready to recognize that this may be treated as a purely technical matter, he nevertheless refutes it as "absurd" and leading to the same kind of misunderstandings as the "paper-rules in ancient Russian grammars speaking of ending-pairs *a-ja, u-ju*, etc." (p. 121).

When Trager started on the line of "extracting" the element of palatalization, he did not stop there. In his article of 1953 *(Language*, XXIX) quoted by Bidwell, Trager avoids the issue, stating that his *j* is "the symbol of palatalization (without arguing whether this is a phoneme or a component)." But Trager did not hesitate to take the full step out in his analysis of Polish palatalized consonants (in distinction to the palatal ones, it should be noted) giving this element the status of a phoneme. As for this, the reader has to be reminded of Trager's analysis of the sound system of Polish of 1939, "Le systématique des phonèmes

du polonais," (*Acta Linguistica*, 1 [1939], 179-188) in which he suggested a bi-phonemic solution of the problem of palatalization in palatalized consonants. This approach has been recognized by some linguists (c. f. P. Zwoliński in his article, "Dokoła fonemów potencjalnych," *Lingua Posnaniensis*, III [1951], 336), but refuted by most. Judging by Bidwell's remarks in his article of 1957, "The Morphophomenics of Polish" (*General Linguistics*, II [1957], No. 3, Supplement, 71-79) he did not accept Trager's formula. Bidwell, however, speaks of these consonants as of allophones [?]. Bidwell's treatment there of Polish *i* and *j* and phonemes does not solve the problem.

The undersigned has acknowledged the possibility of a bi-phonemic approach to this problem as one of the theoretically thinkable ways of phonemic analysis, (speaking then of "simultaneous phonemes" rather than "simultaneous components"; see "The Problem of Polish Phonemes," *Scando-Slavica*, II [1956], 90 and "The Structural Status of Palatalization in Slavic Languages," *Acta Universitatis Upsaliensia* I [1960], 29 and 31-33), but questioned the real gain of such a procedure of "splitting the phoneme" in two and pointed out that this was an unnecessary complication rather than simplification, and that this was actually too far away from the acoustic reality (especially in the case of final position). (With regard to acoustic reality H. Koneczna found it necessary to remark in her comments on x-ray analysis of Polish sounds that Trager's suggestions are an example of how attempts at finding a neat system occasionally lead to oversimplifications. [See H. Koneczna, "Z badań rentgenologicznych nad głoskami polskimi," *Biuletyn Pol. Tow. Językozn.*, X (1900), 193-195].)

The merit of Bidwell's approach as compared to Trager's transcription (not to speak of Trager's bi-phonemic suggestion) is that he recognizes the necessity of avoiding the possible confusion between the element of palatalization and the existing phoneme *j*. But, however tempting from the point of view of morphophonemics, the entire operation of extracting the component of palatalization seems of a relative value. As long as it is an acoustic feature, a component—whether long or short—then we are in agreement. I do not know any phonemic analysis of Russian (or Polish) that does not, in one way or another, take into account the element of palatalization, as a distinctive feature. It should be added that the thought of extracting the palatalization element also from *j* as Bidwell's chart seems to indicate leads to additional complications.

I do not feel competent to take a stand on the problem (of extracting components) as such. I think that, as Z. Harris showed, in some instances this procedure may lead to interesting results. However, I think that in the particular instance of the analysis of the Slavic palatalization it does not bring any clearer picture.

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EDITORIAL COMMENT

While it is not the practice of the *Journal* to accompany contributions with critical comments, the editors consider both Prof. Bidwell's article and Prof. Folejewski's rejoinder to be of sufficiently general and methodological interest to depart from this practice. A few additional remarks may not be out of order.

One can raise no objections on logical grounds to Prof. Bidwell's proposal to extract a component of palatalization. Every phoneme can be decomposed into its ultimate components, which in Jakobson's terminology are its distinctive features. The catch lies in treating a simultaneous, superposed feature as a successive, linear segment. It is in proposing such a treatment that Prof. Bidwell departs from the phonological reality of Russian (as is correctly pointed out by Prof. Folejewski) and follows the reductionist approach to "liberate" the various Slavic consonantal systems from the feature of palatalization or palatality. This approach has been especially common among non-Slavic scholars (beginning, as a matter of fact, with Ludolf). To Prof. Folejewski's list of modern structuralists bent on reducing the number of phonemes by increasing the number of graphic symbols, or by treating a palatalized or palatal consonant as hard consonant plus *j*, one could add a number of names (e.g., Olmsted, Orenstein and VanCampen, Hodge, Kuznecov). Actually one could perform the same manipulation with other features as well; e.g., the voiced consonants /b, d, g/ could easily be interpreted as voiceless plus a component of voicing, and transcribed, for example, as /p_x, t_x, k_x/. As observed by Baudouin de Courtenay, Frenchmen attempting to render the opposition between hard and soft consonants, often tend to substitute voiced consonants for the Russian palatalized consonants, equating the marked component of voicing with that of palatalization.

Prof. Bidwell confuses, unfortunately, palatal and palatalized consonants, a distinction which has been repeatedly emphasized by Slavic phoneticians and phonologists (Tomson, O. Broch, Nitsch, Baudouin de Courtenay, Ščerba, Trubetzkoy, Jakobson, et al.). Thus there is no reason to treat /č/ as a "palatalized" and /š, ž/ as "non-palatalizable" phonemes, even if they differ in their distribution. But a difference in distribution does not effect the status or paradigmatic relationships of phonemes (cf. for example, the different distributional constraints upon the labial consonants in the speech of Moscow vs. Leningrad). The sequences /šš„ žž„/ admit, according to Bidwell himself, the component of palatalization. He is, however, wrong in claiming that the difference between the "soft" geminated spirants /šš„ žž„/ is a matter of idiolect and not of the two standard varieties; he leaves furthermore, untouched the relation of the above sequences to the "hard" /šš, žž/ (as in /n'íššij/, /žžónij/ 'lower, burnt'). As the stresses, junctures, contours, and pitch-levels are only stated in a perfunctory fashion, one cannot see their relevance for Russian phonology; they appear to be simply transplanted from the Smith-Trager analysis of the English phonemic system.

The phonemic status of /y/ (which was argued for Russian also by Ščerba, Matusevič, Gvozdev) seems to us illusory. The treatment of quotation-words, meta-linguistic entities, onomatopoeia, and other such entities on an equal footing with the core elements of a language cannot but lead to an endless proliferation of phonemes and to a renunciation of any systematization and economy.

The claim to pedagogical gains, and morphophonemic simplification seems to us, on the other hand, unwarranted. It is true that Bidwell's notation could be helpful in teaching the Cyrillic letters to beginning students. But since when is it the task of linguists and teachers to adjust the phonemic system to the alphabet of a given language, rather than to interpret the relationship of a conservative alphabet to the actual phonemic system?

If one remembers that all Russian nominal stems are either hard or soft, and that /e/ can be preceded (with the exception of quotation-words) only by soft consonants, there is hardly any morphophonemic problem in the declension of Russian substantives and adjectives. The rule is simply *lack* of consonantal alternations, a rule which has interesting historical and comparative implications (cf. my article, "The Consonantal Alternations in the Slavic Declensions," *Word*, XVI, No. 2, pp. 183 ff.). While Mr. Bidwell is right in his criticism of such anomalies as "hard," "soft," and "mixed" adjectival declensions, his own morphophonemic notation is misleading in that it fails to mark consistantly morpheme boundaries, uses /o, e/ for desinential syllables which are never accented, but actually only /a/ (as in gen. sg. -ova, nom.-acc. neuter -oja), and reintroduces the "phoneme" /y/.

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